FACE INVESTIGATION

SUBJECT: Assistant machine operator was electrocuted when he handled a compressed air nozzle and screw driver near or in a power cord carrying 480 volts

SUMMARY:

A 21 year old white male machine operator was electrocuted. When he was last seen, he was using compressed air near an energized 440 volt Hubbell aluminum cast plug. The machine the worker had been working on, a hoist, had stopped functioning earlier in the day. At that time the supervisor was seen using compressed air to blow on the female end of the energized power cord plug. The machine was then re-attached to the power cord and functioned. Later when the machine stopped running a second time, the machine operator was seen by the power cord plug using compressed air. Moments later he was seen on the floor. It is not certain exactly how the worker made contact with the energy source (some witnesses indicate there was a screw driver involved, others say it may have been the nozzle of the compressed air hose that the worker was holding that may have touched the power source). Co-workers called the police and rescue squad and when the police arrived 2 man CPR was begun. When the rescue squad arrived they took over and continued CPR and transported the victim to an area hospital where he was pronounced dead 1 hour following the incident. The Wisconsin FACE investigator concluded that, in order to prevent similar occurrences, the employer should:

! **Conduct a job-site survey to identify potential hazards before beginning any job. Remove from service defective equipment. Lock out and tagout defective equipment according to OSHA lock out tagout requirements. Consider using power plugs with non-conductive housing.**

! **Develop, implement and enforce a comprehensive written safety program that includes a policy on electrical safety.**

! **Train workers to recognize safety hazards in their workplace that pertain to their job assignments, and in this instance, specifically electrical hazard recognition.**

INTRODUCTION:

On July 22, 1992, a 21 year old assistant machine operator was electrocuted after he was seen handling a compressed air nozzle or a screw driver by a power cord plug. The Wisconsin FACE investigator was notified of the fatality on August 3, 1992 by the Safety and Buildings Division of the Department of Industry Labor and Human Relations. A site visit was made on August 12, 1992 along with a safety inspector from the DILHR Division of Safety and Buildings. Photographs were obtained from the police department as the employer had removed the equipment involved. A police report, coroners report, death certificate and a workers compensation report were obtained. The owner of the company and the safety engineer were interviewed.

The company had been in business for 13 years at the site where the incident occurred. Sixty five workers are employed, 6 with the same job title of the victim. A safety officer spends 0-25% time on safety issues. The company has general safety rules, none specific to the activity surrounding the incident.

INVESTIGATION:

At approximately 5:30 AM on July 22, 1992, a machine operator was electrocuted. Another person was working with the victim. The police report summarized this worker's view of the situation as follows: "He stated he saw the machine operator having a problem with the hoist in his work area. He stated he saw the machine operator using a compression hose on an outlet. He then said he saw him (the machine operator) pick up a screw driver and the next thing he knew he (machine operator) was on his back shaking." It is surmised that the worker may have been attempting to "clean out" the energized 440 volt Hubbell aluminum cast plug on the load side. According to the police report, the hoist had stopped operating earlier in the shift and the worker had seen the supervisor use compressed air on the outlet. Apparently the hoist functioned after the supervisor reconnected it to the power cord but malfunctioned later and the victim tried to get it to work as described above. After the person working with the victim saw him fall he called coworkers over to help and one of them called the police department. The police arrived and began 2 man CPR until the rescue squad arrived and took over and continued the CPR and transported the victim to an area hospital where he was pronounced dead 1 hour following the incident. The police found no moisture or spilled liquid on the floor near the victim, a screw driver found near the victim was taken to the police department and secured.

CAUSE OF DEATH: Cardiac electrical interruption caused by electrocution

Burns consistent with electrocution, left hand burns to the fingers.

RECOMMENDATIONS/DISCUSSION:

Recommendation #1: conduct a job-site survey to identify potential hazards before beginning any job. Remove from service defective or malfunctioning equipment. Lockout and tag out equipment according to OSHA requirements. Consider use of plugs with non-conductive housing.

Discussion: In this incident, the energy flow from a power cord to a machine malfunctioned and the machine and cord were not locked out and tagged out until they were tested to determine the source of the problem. Periodic inspections should be conducted for all electrical system equipment and components in order to identify and eliminate or control electrical hazards present. Records should be kept of all electrical hazards identified and corrective action should be taken immediately. Company policy should identify clearly who is responsible for corrective action and all supervisors should be clearly appraised of their responsibility to immediately enforce safety policies. Periodic safety inspections should be supplemented with daily inspections by personnel using the equipment. Consider the replacement of current metal housed hobble plugs with ones having plastic or rubber housing. A jobsite survey may indicate if housekeeping is sufficient

to keep plugs and other machine parts free of dust.

Recommendation #2: Develop, implement and enforce a comprehensive written safety program that includes a policy on electrical safety for all workers with a potential for exposure.

Discussion: This employer had written safety policies but the written lockout and tagout policy did not extend to this work activity.

Recommendations #3: Train workers to recognize safety hazards,in their workplace that pertain to their work assignments. In this instance, electrical hazard recognition.

Discussion: Workers with a potential for exposure to electrical hazards should receive training in electrical safety, the recognition, identification and reporting of unsafe tools/machines/conditions. This training would clearly identify that workers must stop work immediately when electrical defects or malfunctioning is noted and to whom they are to report the defect for immediate lockout.